Mandatory Greenhouse Gas Reporting Rule: EPA's Response to Public Comments

Volume No.: 28

Subpart U—Miscellaneous Uses of Carbonate

September 2009

Subpart U—Miscellaneous Uses of Carbonate

U. S. Environmental Protection Agency
Office of Atmosphere Programs
Climate Change Division
Washington, D.C.

FOREWORD

This document provides EPA's responses to public comments on EPA's Proposed Mandatory Greenhouse Gas Reporting Rule. EPA published a Notice of Proposed Rulemaking in the Federal Register on April 10, 2009 (74 FR 16448). EPA received comments on this proposed rule via mail, e-mail, facsimile, and at two public hearings held in Washington, DC and Sacramento, California in April 2009. Copies of all comments submitted are available at the EPA Docket Center Public Reading Room. Comments letters and transcripts of the public hearings are also available electronically through *http://www.regulations.gov* by searching Docket ID *EPA-HQ-OAR-2008-0508.*

Due to the size and scope of this rulemaking, EPA prepared this document in multiple volumes, with each volume focusing on a different broad subject area of the rule. This volume of the document provides EPA's responses to significant public comments received for 40 CFR Part 98, Subpart U—Miscellaneous Uses of Carbonate.

Each volume provides the verbatim text of comments extracted from the original letter or public hearing transcript. For each comment, the name and affiliation of the commenter, the document control number (DCN) assigned to the comment letter, and the number of the comment excerpt is provided. In some cases the same comment excerpt was submitted by two or more commenters either by submittal of a form letter prepared by an organization or by the commenter incorporating by reference the comments in another comment letter. Rather than repeat these comment excerpts for each commenter, EPA has listed the comment excerpt only once and provided a list of all the commenters who submitted the same form letter or otherwise incorporated the comments by reference in table(s) at the end of each volume (as appropriate).

EPA's responses to comments are generally provided immediately following each comment excerpt. However, in instances where several commenters raised similar or related issues, EPA has grouped these comments together and provided a single response after the first comment excerpt in the group and referenced this response in the other comment excerpts. In some cases, EPA provided responses to specific comments or groups of similar comments in the preamble to the final rulemaking. Rather than repeating those responses in this document, EPA has referenced the preamble.

While every effort was made to include significant comments related to 40 CFR Part 98, Subpart U—Miscellaneous Uses of Carbonate in this volume, some comments inevitably overlap multiple subject areas. For comments that overlapped two or more subject areas, EPA assigned the comment to a single subject category based on an assessment of the principle subject of the comment. For this reason, EPA encourages the public to read the other volumes of this document with subject areas that may be relevant to 40 CFR Part 98, Subpart U—Miscellaneous Uses of Carbonate.

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SUBPART U—MISCELLANEOUS USES OF CARBONATES

1. DEFINITION OF SOURCE CATEGORY

Commenter Name: Robert D. Bessette
Commenter Affiliation: The Council of Industrial Boiler Owners (CIBO).
Document Control Number: EPA-HQ-OAR-2008-0508-0513.1
Comment Excerpt Number: 40

Comment: Miscellaneous uses of carbonate only exempts certain manufacturing uses in Section 98.210 (b). It appears that all other uses of those materials would need to go through the reporting process including determination of fraction calcination. In order to prevent wasted efforts, EPA should qualify that section to state that the provision is only applicable to those processes where CO_2 can be released to the atmosphere above a threshold quantity.

Response: Final rule language has been changed to address facililites which do not emit GHGs. A detailed response has been provided in section III of the preamble to this rule (see section U, Miscellaneous Uses of Carbonates). Note that facilities are allowed to use a default value of 1.0 for the calcination fraction.

Commenter Name: Mark Hughes
Commenter Affiliation: Church & Dwight Co., Inc.
Document Control Number: EPA-HQ-OAR-2008-0508-0432
Comment Excerpt Number: 1

Comment: Church & Dwight would like to clarify the applicability of Subpart U, "Miscellaneous Use of Carbonate", of the proposed Part 98 – Mandatory Greenhouse Gas Reporting regulations. The definition of the source category in Section 98.210 includes any equipment that uses carbonates in a manufacturing process. However, the GHG emission estimate in Section 98.213 assumes liberation of the CO_2 from the carbonate in processing. We request the definition be clarified to state that the source category only includes those manufacturing processes that use carbonates and release the CO_2 from the carbonate in processing.

Response: A response has been provided in section III of the preamble to this rule (see section U, Miscellaneous Uses of Carbonates).

Commenter Name: Kyle Pitsor
Commenter Affiliation: National Electrical Manufacturers Association (NEMA)
Document Control Number: EPA-HQ-OAR-2008-0508-0621.1
Comment Excerpt Number: 34

Comment: The NEMA Carbon/Manufactured Graphite EHS Committee also requests EPA to clarify whether carbonates kept on-site at a facility for emergency response purposes, such as to be used to neutralize a potential chemical spill, and that would not be used in a manufacturing process or equipment, would be exempt from the recordkeeping and reporting requirements

under Subpart U. The NEMA Carbon/Manufactured Graphite EHS Committee believes that uses of carbonates other than carbonates consumed in high-temperature process equipment, for example low-temperature process uses and ancillary purposes such as neutralization, generate insignificant quantities of CO_2 process emissions and should therefore be excluded from reporting requirements. The NEMA Carbon/Manufactured Graphite EHS Committee furthermore requests EPA to exempt these uses from the source definition. This will lessen the burden on the regulated community, which will otherwise be required to estimate emissions annually for the purpose of demonstrating that a facility, which solely uses carbonates for low-temperature processes or for ancillary purposes, does not exceed the reporting threshold.

Response: A response has been provided in section III of the preamble to this rule (see section U, Miscellaneous Uses of Carbonates).

Commenter Name: Juanita M. Bursley
Commenter Affiliation: GrafTech International Holdings Inc. Company (GrafTech)
Document Control Number: EPA-HQ-OAR-2008-0508-0686.1
Comment Excerpt Number: 33

Comment: Under §98.210, the definition includes "any equipment that uses ...carbonate in a manufacturing process". However, under §98.217(b), there is a reference to "carbonate-based raw material". Furthermore, on page 16526 of the preamble for Subpart U, number 1. Definition of the Source Category, there is mention of the fact that CH_4 and N_2O are not released from "the calcination of carbonates". These terms are not further defined in the proposed GHG reporting rule. On the same page of the preamble, under number 3. Selection of Proposed Monitoring Methods, there is also the mention of "measuring the type and quantity of carbonate input to a kiln or furnace" (emphasis added). Therefore, GrafTech believes it is unclear whether the intended meaning of "uses of carbonate" includes only processes where the carbonate-based material is consumed as a raw material in the manufacture of a product, and/or only when subjected to high-temperature process equipment like a furnace or kiln, for example for calcination purposes, or more broadly to also include any ancillary and low-temperature uses, whether in or out of a manufacturing process equipment. For example, would carbonate-based materials used as a low-temperature (< 400 degrees Fahrenheit) chemical treatment process, such as a neutralizing agent or buffering chemical, or as a cleaning agent for process equipment, be excluded from the definition and therefore be exempt from the calculation and reporting requirements? GrafTech also requests EPA to clarify whether carbonates kept on-site at a facility for emergency response purposes, such as to be used to neutralize a potential chemical spill, and that would not be used in a manufacturing process or equipment, would be exempt from the recordkeeping and reporting requirements under Subpart U. GrafTech believes that uses of carbonates other than carbonates consumed in high-temperature process equipment, for example low-temperature process uses and ancillary purposes such as neutralization, generate insignificant quantities of CO_2 process emissions and should therefore be excluded from reporting requirements. GrafTech furthermore requests EPA to exempt these uses from the source definition. This will lessen the burden on the regulated community, which will otherwise be required to estimate emissions annually for the purpose of demonstrating that a facility, which solely uses carbonates for low-temperature processes or for ancillary purposes, does not exceed the reporting threshold.

Response: EPA recognizes that N_2O and CH_4 are not released in the use of miscellaneous carbonates; therefore sources are not required to perform any calculations or reporting of these gases. The final rule language specifies CO_2 as the GHG to report from the source category.

Also see the response provided in section III of the preamble to this rule (see section U, Miscellaneous Uses of Carbonates).

Commenter Name: Kyle Pitsor
Commenter Affiliation: National Electrical Manufacturers Association (NEMA)
Document Control Number: EPA-HQ-OAR-2008-0508-0621.1
Comment Excerpt Number: 32

Comment: On page 16526 of the preamble for Subpart U, number 1. Definition of the Source Category, there is mention of the fact that CH_4 and N_2O are not released from "the calcination of carbonates". These terms are not further defined in the proposed GHG reporting rule.

Response: See the response to comment EPA-HQ-OAR-2008-0508-0686.1, excerpt 33.

Commenter Name: Kyle Pitsor
Commenter Affiliation: National Electrical Manufacturers Association (NEMA)
Document Control Number: EPA-HQ-OAR-2008-0508-0621.1
Comment Excerpt Number: 31

Comment: Under §98.210, the definition includes "any equipment that uses ...carbonate in a manufacturing process" (emphasis added). However, under §98.217(b), there is a reference to "carbonate-based raw material".

Response: We appreciate the clarification in language. The final rule has removed any reference to a carbonate-based raw material for consistency. This text was listed in error.

Commenter Name: Michael Carlson
Commenter Affiliation: MEC Environmental Consulting
Document Control Number: EPA-HQ-OAR-2008-0508-0615
Comment Excerpt Number: 23

Comment: The Miscellaneous Uses of Carbonates Source Category (16526) is poorly defined, making it difficult to accurately assess its applicability to an industrial facility. E.g., some facilities, besides integrated iron and steel facilities, use limestone and other carbonate as refractory in furnaces. Does this use of carbonates trigger this proposed source category, Subpart U? If yes, what amount triggers the proposed rule? A de minimis quantity would be most appropriate for this source category.

Response: A response has been provided in section III of the preamble to this rule (see section U, Miscellaneous Uses of Carbonates).

Commenter Name: Sean M. O'Keefe

Commenter Affiliation: Hawaiian Commercial and Sugar Company (HC&S)
Document Control Number: EPA-HQ-OAR-2008-0508-1138.1
Comment Excerpt Number: 12

Comment: Subpart U of the proposed rule specifies methods for estimating emissions from miscellaneous uses of carbonate. Under §98.210, the source category consists of "any equipment that uses limestone, dolomite, ankerite, magnesite, siderite, rhodochrosite, sodium carbonate, or any other carbonate in a manufacturing process"; carbonates consumed in eight specified production processes are excluded. GHG emissions are to be estimated based on annual carbonate consumption, the fraction of carbonate calcination achieved, and the appropriate CO_2 emission factor from Table U-1. According to the Technical Support Document: Limestone and Dolomite Use (Except in Cement, Lime, and Glass Manufacturing), emissions from the use of limestone and other carbonates in manufacturing result from a calcination process in which the carbonate is sufficiently heated, generating CO_2 as a byproduct. The TSD describes various uses of limestone as being either emissive (e.g., limestone used as a sorbent in flue gas desulfurization systems) or non-emissive (e.g., limestone use in the manufacturing of paper). For non-emissive uses, emissions of carbon dioxide do not occur and therefore should not be counted under Subpart U. Subpart U, however, does not differentiate between emissive and non-emissive uses, and §98.212 requires that emissions be reported for "all miscellaneous carbonate use at the facility" (except as excluded from the source category under §98.210(b)) based on annual carbonate consumption. Quicklime (calcium oxide) is used in the production of raw sugar from sugarcane. Quicklime is hydrated, or slaked, at the sugar mill. The resulting mixture, called "milk of lime" (calcium hydroxide) is added to the juice produced in the sugar mill to adjust the pH and facilitate the removal of impurities in the clarifier. Since calcium oxide absorbs carbon dioxide from the air to form calcium carbonate, calcium carbonate is present at low concentrations (less than 10% by weight) in the quicklime used in sugar production. Because carbonates are present only as an impurity in quicklime and do not result in carbon dioxide emissions in the sugar manufacturing process, carbonates "consumed" in the production of raw sugar should be excluded from the miscellaneous uses of carbonate source category in the proposed rule. A&B recommends that the proposed §98.210 be amended to specifically exclude from the source category any non-emissive uses of carbonate (i.e., uses where calcination, and therefore the production of CO_2, does not occur).

Response: A response has been provided in section III of the preamble to this rule (see section U, Miscellaneous Uses of Carbonates).

Commenter Name: Michael Garvin
Commenter Affiliation: Pharmaceutical Research and Manufacturers of America (PhRMA)
Document Control Number: EPA-HQ-OAR-2008-0508-0959.1
Comment Excerpt Number: 11

Comment: We recommend that EPA mirror other GHG programs that are in place globally, such as EU Directive 920063/87/EC, where the affected sources are clearly defined. This would eliminate the ambiguous and complex nature of the current proposed language on carbonate emissions.

Response: The definition of the source category has been updated. A detailed response has been provided in section III of the preamble to this rule (see section U, Miscellaneous Uses of Carbonates).

Commenter Name: Jessica S. Steinhilber
Commenter Affiliation: Airports Council International North America (ACI-NA)
Document Control Number: EPA-HQ-OAR-2008-0508-1063.1
Comment Excerpt Number: 10

Comment: While we believe EPA intends to require reporting of GHG emissions associated with cement manufacturing at the production level, EPA should clarify that onsite mixing of processed cement with aggregate at construction sites is not considered part of the manufacturing process. A clearer discussion of the "Miscellaneous Uses of Carbonates" section could clarify this issue.

Response: The definition of the source category has been updated. A detailed response has been provided in section III of the preamble to this rule (see section U, Miscellaneous Uses of Carbonates).

Commenter Name: Chris Greissing
Commenter Affiliation: Industrial Minerals Association - North America (IMA-NA)
Document Control Number: EPA-HQ-OAR-2008-0508-0705.1
Comment Excerpt Number: 7

Comment: Sodium carbonates are used to produce sodium bicarbonate and sodium hydroxide (chemical caustic). [See DCN:EPA-HQ-OAR-2008-0508-0705.1 for detailed chemical reactions provided by the commenter]. Since the chemical reactions involved do not release any carbon dioxide, it is proposed that the source definition be amended to exclude sodium carbonates consumed in the production of sodium bicarbonate and sodium hydroxide. IMA-NA would like to propose the following language for §98.210(b): "(b) This source category does not include carbonates consumed for producing cement, glass, ferroalloys, iron and steel, lead, lime, pulp and paper, or zinc. The source category also does not include sodium carbonates consumed for the production of sodium bicarbonate or sodium hydroxide."

Response: We agree with this additional clarification and have excluded sodium bicarbonate and sodium hydroxide sources from reporting by definition under Subpart U. In response to similar comments we have revised the source category to include processes that emit CO_2, specifically from calcination of carbonates. A detailed response has been provided in section III of the preamble to this rule (see section U, Miscellaneous Uses of Carbonates).

Commenter Name: C. Dean Thompson
Commenter Affiliation: Resilient Floor Covering Institute (RFCI)
Document Control Number: EPA-HQ-OAR-2008-0508-1572
Comment Excerpt Number: 1

Comment: RFCI believes that the source category "miscellaneous uses of carbonate," which includes the use of limestone and dolomite, needs to be revised to clearly exclude those industrial processes using limestone and dolomite that are not heated to a sufficient temperature to release carbon dioxide (CO_2). Such excluded processes would include the use of limestone and dolomite

in the manufacture of resilient flooring products produced in the United States (e.g. vinyl tile, vinyl composition tile, sheet vinyl flooring, rubber tile). In the absence of a clear exclusion, the proposal would require even non-emissive users of limestone and dolomite to undertake costly and burdensome testing to demonstrate what is already known, i.e. limestone and dolomite used in the resilient flooring manufacturing process are not heated sufficiently to generate CO_2. In Subpart U, "miscellaneous uses of carbonate" consist of "any equipment that uses limestone, dolomite" and other carbonates "in the manufacturing process." Prop. 42 C.F.R. § 98.210. To determine whether a facility meets the reporting threshold of 25,000 tpy under proposed section 98.2(a)(2), the proposal requires the use of the costly and time-consuming Subpart U methodology to calculate the amount of CO_2 emissions (if any) from the manufacturing use of limestone, dolomite, and other carbonates. See id. § 98.2(b)(1). For example, this methodology requires the facility to determine the calcination fraction for each carbonate used i.e. the fraction of carbonate that is volatilized in the industrial process (if any) which releases CO_2. Id. § 98.214(b). To do so, sampling and chemical analyses must be conducted by a certified laboratory using an x-ray fluorescence test or other enhanced test method. Id. If a company does not want to pay to measure the calcination fraction, the proposal requires a default value of 1.0 which assumes that all of the carbonate is heated sufficiently to generate CO_2. Id. § 98.213. In the preamble to the proposal and the Technical Support Document: Limestone and Dolomite Use (Except in Cement, Lime, and Glass Manufacturing) (Technical Support Document), EPA recognizes that limestone is used in a wide variety of industries, including construction, agriculture, chemical, metallurgy, glass manufacture, and environmental pollution control. The Agency explains that "[for some of these applications, limestone undergoes a calcination process in which the limestone is sufficiently heated, generating CO_2 as a by-product." Technical Support Document at 3. These emissive applications include limestone used as a flux or purifier in metallurgical furnaces, a sorbent in certain pollution control equipment, and a raw material in mineral wool or magnesium production. However, EPA recognizes there are a number of non-emissive applications because insufficient heat is used, including limestone used in poultry grit, as asphalt filler, and in the manufacturing of paper. The manufacturing process for resilient flooring products (vinyl tile, sheet vinyl, rubber tile products) do not heat the limestone or dolomite at high enough temperatures to release CO_2. These manufacturing processes typically do not exceed approximately 500° F because to do so would thermally degrade the resilient flooring product. In contrast, it is well documented that limestone needs to be heated to at least 1022° F (550° C) to begin to release CO_2 through the calcination (dissociation) process based on the equilibrium pressure of CO_2 over calcium carbonate at that temperature. See Robert C. Weast & Melvin J. Astle (eds), CRC Handbook of Chemistry and Physics 62d ed. at F-76; "Calcium Carbonate," Wikipedia (http://en.wikipedia.org/wiki/Calcium_carbonate). Similarly, dolomite needs to be heated to at least 1,328° F (720° C) to begin the dissociation of dolomite which would release CO_2. Chiranjib Kumar Gupta, Chemical Metallurgy - Principles and Practice at 348. As a result, limestone and dolomite must be heated to temperatures more than twice as high as used in the resilient flooring manufacturing process before any CO_2 is released. Thus, the use of limestone and dolomite in the manufacture of resilient flooring is non-emissive, as EPA has recognized for other applications specified above. To avoid imposing unnecessary calculation and testing burdens and costs on the resilient flooring and other non-emissive industries using limestone and dolomite, EPA should revise the proposal regarding "miscellaneous uses of carbonate" to draw a bright-line exclusion for those manufacturing processes that do not sufficiently heat limestone to generate CO_2. One approach would be to create a temperature threshold for each of the carbonates specified in the "miscellaneous uses of carbonate" source category set forth in proposed section 98.210 "Definition of the Source Category." This source category would include the use of the specified carbonate in manufacturing equipment only if the carbonate is heated to temperatures equal to or above the threshold at which CO_2 begins to be

released. For limestone the temperature threshold would be 1022° F (550° C) and for dolomite the threshold would be 1328° F (720° C). By limiting the "miscellaneous uses of carbonate" source category in this way, EPA would eliminate a costly burden on the resilient flooring and other industries which serves no useful purpose.

Response: The definition of the source category has been updated; however a specific temperature threshold has not been specified. A detailed response has been provided in section III of the preamble to this rule (see section U, Miscellaneous Uses of Carbonates).

Commenter Name: Lorraine Krupa Gershman
Commenter Affiliation: American Chemistry Council (ACC)
Document Control Number: EPA-HQ-OAR-2008-0508-0423.2
Comment Excerpt Number: 110

Comment: EPA has proposed to require GHG emissions reporting from any facility that meets the requirements of §98.2(a)(1) or (2) and that 'uses' any carbonate in a manufacturing process. If interpreted literally, this language would require that any piece of equipment that has any amount of a carbonate compound would be subject to reporting if it meets the criteria of §98.2(a)(1) or (2). Because carbonate compounds are ubiquitous on earth, [Footnote: United States Bureau of Mines. http://www.absoluteastronomy.com/topics/Carbonate.] nearly every piece of equipment could conceivably meet this definition. In addition, this language will require facilities with non-emissive uses of carbonate to analyze and report data. Clearly, this will impose costs on the economy without any environmental benefit. Examples of non-emissive uses of carbonates, all conducted at temperatures well below 1,000°F, include the following: Blending calcium carbonate (a.k.a. limestone) into an architectural coating material; Adding sodium carbonate (a.k.a. soda ash) to a wastewater treatment system for pH control; Adding calcium carbonate (a.k.a. agricultural lime) to a research field at an industrial facility; Blending calcium carbonate into road-building aggregate or applying road-building aggregate at an industrial facility; Blending dolomite into soil conditioners for distribution and sale; Adding sodium carbonate to a water softener system; Using sodium carbonate as a food additive for acidity control, dough conditioner, anti-caking agent, etc.; Using sodium carbonate as a toothpaste additive; and Adding sodium bicarbonate (a.k.a. baking soda) to a dough mixture. EPA noted that 'the multiple emissive and non-emissive uses of these carbonates may create confusion over which facilities are required to report.' [Footnote: Technical Support Document: Limestone and Dolomite Use. USEPA Office of Air and Radiation. January 22, 2009. p. 6.] However, EPA has not proposed language that would resolve this confusion. The language of §98.2(a)(1) or (2) requires any facility that has a listed category or that annually emits 25,000 metric tons or more of CO_2e to report its emissions from miscellaneous uses of carbonate. This means that a facility that has a large boiler would have to report data from non-emissive uses of carbonate, such as blending limestone into a building coating. EPA discusses the fact that in some applications, 'limestone undergoes a calcination process in which the limestone is sufficiently heated, generating CO_2 as a by-product.'[Footnote: Id. at p. 3.] However, the proposed language does not restrict reporting to this specific type of process, therein creating the confusion. In order for limestone or any other carbonate to dissociate CO_2, the CO_2 equilibrium pressure must exceed the partial pressure of CO_2 in the air. Based on the current CO_2 concentration in the atmosphere (360 ppmv),8 the atmospheric partial pressure is approximately 0.3 mmHg. Limestone has to be heated above 550°C (1,022°F) for the CO_2 equilibrium pressure to exceed the CO_2 partial pressure. Clearly, most 'miscellaneous uses of carbonate' do not come close to these temperatures yet EPA has proposed no exemption for these facilities. According to §98.214,

facilities that have no emissive uses of carbonate will still have to analyze their carbonate inputs and measure the calcination fraction annually. The only exception to the calcination fraction measurement is to assume that the fraction is 1.0 which is clearly inappropriate for these non-emissive uses. We recommend that EPA modify the proposed language as follows (new language underlined): §98.210(a) This source category consists of any equipment that uses limestone, dolomite, ankerite, magnesite, siderite, rhodochrosite, sodium carbonate, or any other carbonate in a manufacturing process where the carbonate is present at greater than 10% by weight and is heated to a temperature sufficient to make decomposition possible.

Response: The definition of the source category has been updated; however a specific temperature threshold has not been specified. A detailed response has been provided in section III of the preamble to this rule (see section U, Miscellaneous Uses of Carbonates).

Commenter Name: Linda Farrington
Commenter Affiliation: Eli Lilly and Company (Lilly)
Document Control Number: EPA-HQ-OAR-2008-0508-0680.1
Comment Excerpt Number: 30

Comment: The definition of this source category is much too broad, in that it includes non-emissive uses of carbonates in manufacturing processes. For example, limestone may be added as a diluent in animal health premixes or medicated feed additives for cattle, swine, or poultry. In this example, the limestone is mixed with the active pharmaceutical ingredient and other materials at temperatures far below the temperatures required for limestone to dissociate to CO_2. EPA acknowledges that there are a variety of emissive and non-emissive uses of carbonate,14F15 yet the proposed rule fails to make any distinction between the two. Thus, Lilly recommends the definition of this source category be modified to exclude the use of carbonate in manufacturing processes that operate at temperatures sufficiently lower than the temperature required to generate CO_2 emissions from limestone or other types of carbonate.

Response: A response has been provided in section III of the preamble to this rule (see section U, Miscellaneous Uses of Carbonates).

Commenter Name: Bryan Vickers
Commenter Affiliation: The Glass Packaging Institute (GPI)
Document Control Number: EPA-HQ-OAR-2008-0508-0670.1
Comment Excerpt Number: 6

Comment: Carbonates may be used in glass manufacture in pollution control equipment as sorbents for acid gases. Subpart U is unclear as to whether it applies to glass manufacturing facilities; see section 98.210(b).

Response: We appreciate the comment; however, we encourage the commenter to review the rule language. Under 98.210 (b), the proposed rule language already states that "This source category does <u>not</u> include carbonates or carbonate containing minerals consumed for producing…glass…". Glass manufacturing facilities should report emissions under Subpart N (Glass Production) and Subpart C (General Stationary Combustion).

Commenter Name: Carol E. Whitman
Commenter Affiliation: National Rural Electric Cooperative Association (NRECA)
Document Control Number: EPA-HQ-OAR-2008-0508-0483.1
Comment Excerpt Number: 17

Comment: Eliminate the Potential for Duplicative Reporting of CO_2 from Sorbent. Subpart C §98.33(d)(1) states: When a unit is a fluidized bed boiler, is equipped with a wet flue gas desulfurization system, or uses other acid gas emission controls with sorbent injection, use the following equation to calculate the CO_2 emissions from the sorbent, if those CO_2 emissions are not monitored by CEMS. . . . However, it appears that the rule also requires these same emissions to be reported a second time under Subpart U, Miscellaneous Uses of Carbonate. §98.210 states: (a) This source category consists of any equipment that uses limestone, dolomite ankerite, magnesite, siderite, rhodochrosite, sodium carbonate, or any other carbonate in a manufacturing process. (b) This source category does not include carbonates consumed for producing cement, glass, ferroalloys, iron and steel, lead, lime, pulp and paper, or zinc. While this language does exclude uses of carbonate for purposes that have been already covered in previous subparts, it does not exclude the uses captured in Subpart C. We urge EPA to add language to ensure that the emissions covered in §98.33(d)(1) are not double counted by reporting them a second time under §98.210. This could be easily done by adding this category to the list of explicit exclusions in §98.210(b).

Response: We have clarified the language in the final rule in regards to reporting emissions from sorbent uses. Emissions from carbonates used in sorbent technology (such as scrubbers) should be calculated and reported under subpart C (General Stationary Combustion), 98.33(d) "Calculation of CO_2 from Sorbent."

Commenter Name: Barbara A. Walz
Commenter Affiliation: Tri-State Generation and Transmission Association, Inc.
Document Control Number: EPA-HQ-OAR-2008-0508-0495.1
Comment Excerpt Number: 12

Comment: Subpart C §98.33(d)(1) states: When a unit is a fluidized bed boiler, is equipped with a wet flue gas desulfurization system, or uses other acid gas emission controls with sorbent injection, use the following equation to calculate the CO_2 emissions from the sorbent, if those CO_2 emissions are not monitored by CEMS. However, it appears that the rule also requires these same emissions to be reported a second time under Subpart U, Miscellaneous Uses of Carbonate. §98.210 states: (a) This source category consists of any equipment that uses limestone, dolomite ankerite, magnesite, siderite, rhodochrosite, sodium carbonate, or any other carbonate in a manufacturing process. (b) This source category does not include carbonates consumed for producing cement, glass, ferroalloys, iron and steel, lead, lime, pulp and paper, or zinc. While this language does exclude uses of carbonate for purposes that already have been covered in previous subparts, it does not exclude the uses captured in Subpart C. Tri-State urges EPA to add language to ensure that the emissions covered in §98.33(d)(1) are not double counted by reporting them a second time under §98.210.

Response: See the response to comment EPA-HQ-OAR-2008-0508-0483.1, excerpt 17.

Commenter Name: Pamela F. Faggert
Commenter Affiliation: Dominion
Document Control Number: EPA-HQ-OAR-2008-0508-1741
Comment Excerpt Number: 34

Comment: We support EPA's proposal that CO_2 from the injection of sorbents is not required to be calculated (separately) for units operating CEMS since emissions are already captured by the CEMS. We request EPA provide clarification in the rule that electric generating facilities are not required to report GHG emissions from limestone processing operations since those emissions are likewise captured by CEMS.

Response: EPA has added language to the final rule that allows facilities such as electric generating facilities or other facilities reporting under the rule that capture all GHG emissions with CEMS to follow Tier 4 procedures from Subpart C to report combined combustion and process CO_2 emissions.

Commenter Name: Steven J. Rowlan
Commenter Affiliation: Nucor Corporation (Nucor) Document
Control Number: EPA-HQ-OAR-2008-0508-0605.1
Comment Excerpt Number: 39

Comment: In 98.6, the definition of carbonate should be limited to those minerals that EPA has provided calculation methodologies for in Subpart U. Similarly, 98.2 10(a) should be limited to those carbonates for which values are set in Table U-1.

Response: We agree with the commenter. The final rule limits the definition of carbonates covered to those for which values are given in Table U-1 of the subpart.

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2. REPORTING THRESHOLD

Commenter Name: Michael Garvin
Commenter Affiliation: Pharmaceutical Research and Manufacturers of America (PhRMA)
Document Control Number: EPA-HQ-OAR-2008-0508-0959.1
Comment Excerpt Number: 10

Comment: Under the proposed rule, a facility must account for its emissions from "miscellaneous uses of carbonate" in manufacturing processes to assess the applicability of the rule under Section 98.2(a)(2). This could be a tremendous burden for a pharmaceutical manufacturing facility, where the vast majority of GHG emissions would be through combustion operations. However, there would also be a significant listing of small operations and activities which use carbonate compounds in trace quantities. For example, a pharmaceutical manufacturing facility could be using carbonate compounds to create reagent solutions, and wastewater treatment operations could employ carbonate compounds for buffering, chemical precipitation, or solids stabilization. In addition, carbonates in pharmaceutical manufacturing are often used in "non-emissive" applications (i.e., applications such as blending into products before shipment for sale). These uses of carbonates would not be expected to emit or release any COB2B. The burden associated with calculating GHG emissions from these carbonates would be very great, and given how these materials are used, the emissions themselves would be very

small. To address this overly burdensome requirement, PhRMA proposes that EPA include a de minimus threshold for the "miscellaneous uses of carbonate" category based on usage and how the material is used. Under this approach, only bulk use of carbonates would be tracked. We recommend a threshold of 2000 tons per year per facility, which would correlate to COB2B emissions of about 1000 tons per year. The resulting emissions would be equivalent to about 4% of the threshold for combustion sources. PhRMA notes that the 4% value is below the 5% materiality threshold in the World Resources Institute/World Business Council for Sustainable Development Greenhouse Gas Protocol (A Corporate Accounting and Reporting Standard). Inclusion of a usage-based carbonate threshold would remove a complicated burden of identifying, tracking, and quantifying many potential use points at a large pharmaceutical manufacturing facility.

Response: A response has been provided in section III of the preamble to this rule (see section U, Miscellaneous Uses of Carbonates).

Commenter Name: Linda Farrington
Commenter Affiliation: Eli Lilly and Company (Lilly)
Document Control Number: EPA-HQ-OAR-2008-0508-0680.1
Comment Excerpt Number: 31

Comment: EPA's proposal does not allow for any de minimis emissions due to miscellaneous uses of carbonate in small quantities. As currently proposed, the mandatory reporting rule would require an affected facility to calculate carbonate emissions from manufacturing processes that use any carbonate, regardless of the quantity used. Pharmaceutical manufacturing processes may use several different types of carbonates, but in relatively small quantities compared with other industries such as construction or metallurgy. We call for EPA to incorporate a de minimis reporting threshold in Subpart U. Lilly supports a proposal developed by the American Chemistry Council (ACC) to limit applicability of Subpart U to equipment where carbonate is present at greater than 10% by weight and heated to a temperature that allows for decomposition. Another alternative would be to require facilities to estimate CO_2 emissions from each type of carbonate used in quantities exceeding 2000 tons per year.

Response: A response has been provided in section III of the preamble to this rule (see section U, Miscellaneous Uses of Carbonates).

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3. SELECTION OF PROPOSED GHG EMISSIONS CALCULATION AND MONITORING METHODS

Commenter Name: Kyle Pitsor
Commenter Affiliation: National Electrical Manufacturers Association (NEMA)
Document Control Number: EPA-HQ-OAR-2008-0508-0621.1
Comment Excerpt Number: 33

Comment: On page 16526 of the preamble for Subpart U under number 3. Selection of Proposed Monitoring Methods, there is also the mention of "measuring the type and quantity of carbonate input to a kiln or furnace" (emphasis added). Therefore, the NEMA Carbon/Manufactured Graphite EHS Committee believes it is unclear whether the intended

meaning of "uses of carbonate" includes only processes where the carbonate-based material is consumed as a raw material in the manufacture of a product, and/or only when subjected to high-temperature process equipment like a furnace or kiln, for example for calcination purposes, or more broadly to also include any ancillary and low-temperature uses, whether in or out of a manufacturing process equipment. For example, would carbonate-based materials used at a low-temperature (< 400 degrees Fahrenheit) chemical treatment process, such as a neutralizing agent or buffering chemical, or as a cleaning agent for process equipment, be excluded from the definition and therefore be exempt from the calculation and reporting requirements?

Response: A response has been provided in section III of the preamble to this rule (see section U, Miscellaneous Uses of Carbonates).

Commenter Name: Linda Farrington
Commenter Affiliation: Eli Lilly and Company (Lilly)
Document Control Number: EPA-HQ-OAR-2008-0508-0680.1
Comment Excerpt Number: 15

Comment: In order to estimate the CO_2 emissions from the use of carbonates in a pharmaceutical manufacturing process, knowledge of the process chemistry and mass balance may provide a more accurate estimate than the equations provided in Subpart U.

Response: A response has been provided in section III of the preamble to this rule (see section U, Miscellaneous Uses of Carbonates).

Commenter Name: Bryan Vickers
Commenter Affiliation: The Glass Packaging Institute (GPI)
Document Control Number: EPA-HQ-OAR-2008-0508-0670.1
Comment Excerpt Number: 7

Comment: If Subpart U applies to the use of carbonates in exhaust stream scrubber systems, a method of calculating the CO_2 emissions other than through a “calcination” calculation should be adopted. In acid scrubbing for SO_2 for example, one molecule of CO_2 is formed for each molecule of SO_2 captured, thus direct measurement of sulfur removal efficiency is a more accurate means of determining CO_2 emissions from scrubber systems.

Response: See the response to comment EPA-HQ-OAR-2008-0508-0483.1, excerpt 17.

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4. DETAILED GHG EMISSION CALCULATION PROCEDURES/EQUATIONS IN THE RULE

Commenter Name: Lorraine Krupa Gershman
Commenter Affiliation: American Chemistry Council (ACC)
Document Control Number: EPA-HQ-OAR-2008-0508-0423.2
Comment Excerpt Number: 111

Comment: For those facilities that have emissive uses of carbonate, EPA should allow for an alternate measurement system in which the carbonate fraction of the products is measured instead of the calcination fraction. EPA has proposed to require the carbonate inputs based on standard emission factors. Clearly, EPA has confidence in the methodology, therefore, similar calculations for the carbonate outputs should also be acceptable. The proposed language would be modified as follows: "§98.2 13 Calculate the process emissions of CO_2 following methodology specified in paragraph (a) or (b) using Equation U-1 of this section. (a) [Existing language] (b) [See DCN EPA-HQ-OAR-2008-0508-0423.2, page 40 for suggested equation U-2.] Eco2 = [~ (Mk * EFk) - ~ (Mj * EFj)] * 2000/2205 (Eq. U-2) Where: Eco2 = Annual CO_2 mass emission from consumption of carbonates (metric tons) Mk = Annual mass of input carbonate type k (tons) EFk = Emission factor for the carbonate type k, as specified in Table U-1 to this subpart (metric tons CO_2/metric ton carbonate input) Mj = Annual mass of output carbonate type j (tons) EFj = Emission factor for the carbonate type k, as specified in Table U-1 to this subpart (metric tons CO_2/metric ton carbonate input) §98.216 [Unchanged] If following §98.213(a): a. Annual carbonate consumption (by carbonate type in tons) b. Annual fraction calcinations (c) If following §98.213(b): a. Annual carbonate input (by carbonate type, in tons) b. Annual carbonate output (by carbonate type, in tons) (d) [Unchanged]

Response: A response has been provided in section III of the preamble to this rule (see section U, Miscellaneous Uses of Carbonates).

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5. RECORDS THAT MUST BE RETAINED

Commenter Name: Lorraine Krupa Gershman
Commenter Affiliation: American Chemistry Council (ACC)
Document Control Number: EPA-HQ-OAR-2008-0508-0423.2
Comment Excerpt Number: 112

Comment: The records that EPA has proposed to require are duplicative and therefore place unnecessary costs on the economy with no added environmental benefit. In §98.217(a), EPA proposes to require that facilities maintain records of monthly carbonate consumption including procedures used to ensure accuracy. Then in §98.217(c), EPA proposes to require that facilities maintain records of all carbonate purchases and deliveries which does not provide any information additional to 98.217(a). We therefore encourage EPA to delete §98.217(c) in the final rule.

Response: We agree with the commenter. We have revised the final rule language to eliminate the duplicative recordkeeping requirements under 98.217 "Recordkeeping". For further detail, a response has been provided in section III of the preamble to this rule (see section U, Miscellaneous Uses of Carbonates).
